Chapter 10
Fostering Pro-Environmental Behaviors With AI-Driven Educational Psychology in Education 5.0

Minh Tung Tran
https://orcid.org/0000-0002-4238-882X
FPT School of Business and Technology, FPT University, Vietnam

ABSTRACT

This research proposes an innovative AI-driven educational psychology model, the AI-EcoCollaborative Educational Psychology Model, to foster pro-environmental behaviors in Education 5.0. By integrating AI technologies with educational psychology principles, the model aims to create personalized, engaging, and interactive learning experiences that promote environmental awareness and action. The model incorporates various components, including personalized interventions, virtual reality simulations, and ethical considerations, to ensure effective and responsible implementation. Through case studies and future directions, the research explores the potential of AI-driven educational psychology in shaping a sustainable future.

1. INTRODUCTION

Education 5.0 involves transforming schooling from the use of artificial intelligence (AI) to comfort and healing perspectives in the AI context with the hope of symbiosis. The aim is to deliberately engineer AI-driven materials and pedagogies

DOI: 10.4018/979-8-3693-8191-5.ch010

under the influence of energy conservation, carbon neutrality and sustainability, gender equality and women's empowerment, diversity and inclusion, equitable quality education. Alongside mathematics education, social, emotional and mental health (SEMH) education is among the priorities in Education 5.0 as a post COVID-19 pandemic education agenda. Fostering pro-environmental behaviors is needed for any educational efforts targeting climate change actions as climate change education concerns to potential climate change mitigation behaviors. Motivated by Education 5.0, a paradigm shift to non-invasive biophysiological AI-driven SEMH educational psychology is discussed with the intention of facilitating pre-service mathematics, computer science and special education teachers' educative pro-environmental behaviors (Ferreira Mello et al., 2023).

1.1. Background and Rationale

Education 5.0 strives to address the current issues that continue to evolve along the technological times in the Fourth Industrial Revolution (Industry 4.0) while predicting and preparing learners and the education system to prepare for the future of the world in the Fifth Industrial Revolution (Society 5.0). Society 5.0 is envisioned to ensure a balance between economic advancement and the resolution of the issues facing humanity. A key program in creating education systems, the personnel and areas that are deemed crucial for the Society 5.0 vision hinges upon the incorporation of advanced technologies that fill the gap between where the education and other education-related systems are at the moment, and to where they need to be, driving the transformation of Education 4.0 components such as learning contents and methods, learning environment, roles of stakeholders and the education ecosystem itself (Aliabadi et al., 2023). There is also the need to establish trustworthiness and openness, especially in the creation of artificial intelligence (AI) and education systems using AI. Education 5.0 strives to open the black box in and ensure outcome transparency, and addresses ethics and bias to serve societal needs as learning activities with AI in Education 4.0 may affect learners in the learning ecosystem and other stakeholders' decision-making at the individual, institution, society, and world levels (Porayska-Pomsta, 2024).

With the AI deep learning evolution, it became possible to modify and innovate educational psychology modelling by leveraging the large amount and diversified digital psychologists, learners and educators data in the open internet. A new educational psychology modelling paradigm is envisioned by employing unprecedented access to use the discovered knowledge in algorithmic educational models and systems. The objective of the new modelling paradigm is twofold. First, the modelling approach for the core stakeholders in the educational psychology modelling process are the learners and the educators interact with the AI systems, algorithms and con-